

Appl. No. 10/766,231

Amdt. Dated December 27, 2006

Reply to Office Action of October 18, 2006

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AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0032] with the following amended paragraph:

[0032] The above-described method of forming and locating the film cooling holes in the airfoil of a turbine engine blade minimizes the distance between the individual film cooling holes in adjacent rows of cooling holes, while still maintaining a predetermined minimum distance between each hole at all locations along the length of each row of film cooling holes. Moreover, the compound angle between the hole centerlines and a tangent to the airfoil upstream sidewall outer surface is also minimized. In a particular preferred embodiment, the predetermined minimum distance between each hole is between about two and about four times a ~~hole~~ hole diameter, and the compound angle between the hole centerlines and tangent to the surface is between about 15-degrees and about 30-degrees, and is preferably less than about 20-degrees. Hence, the film effectiveness is maximized. As a result, a particular gas turbine engine that included airfoils manufactured as described herein, was able to operate at turbine gas temperatures approximately 100°F higher than a turbine engine using conventionally manufactured airfoils, which translated to about a 7% increase in specific thrust.